PEATLAND REHABILITATION EFFORTS
IN NORTH SELANGOR PEAT SWAMP FOREST

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INTRODUCTION:

The North Selangor Peat Swamp Forest (NSPSF) is located in Northwest Selangor, Peninsular Malaysia. Almost all of its 81,304 hectares is gazetted as Forest Reserves. Areas outside the boundaries are dominated by paddy field, oil palm plantation, agriculture and mining land.

From 1998 to 2008, a portion, including parts of Permanent Reserved Forests, was encroached and cleared for agriculture. In 2008, the Selangor State Forestry Department evicted the illegal settlers and reclaimed the forest lands. Unfortunately, drainage canals, land clearing, fires and agricultural activities had dried out the peat soil and removed natural vegetation. Early efforts to rehabilitate the land failed. Later on, Global Environment Centre joined forces with the Selangor State Forestry Department to help rehabilitate the degraded area.

A rehabilitation plan was developed as part of an Integrated Management Plan for NSPSF for 2014-2023 (IMP-NSPSF). This was approved by the Selangor State Government in December 2014. Tripartite Smart Partnership between government, private sector and local community is crucial in implementing the activities proposed in the IMP-NSPSF 2014-2023.

After several years, the degraded areas are much improved, thanks to the collective effort of government departments, NGOs/GEC, corporate partners, volunteers and local community members.

CHALLENGES:

- Relatively high mortality rate of planted saplings.
- Fires that destroyed the replanted areas.

REHABILITATION WAS DIFFICULT BECAUSE:

- The land was drained up to 1m below the surface.
- Soil seed stock was depleted by recurring fires
- Degraded areas were covered in ferns, weeds and lalang, which were susceptible to fire.
- The area is at the edge of the forest reserve, surrounded by private lands with open access. This made the area highly susceptible to deliberate or accidental fires.

MANAGEMENT STRATEGY:

Five key strategies were identified and practised for rehabilitating the NSPSF:

1. HYDROLOGY RESTORATION / REWETTING

The first step in rehabilitation is to stop drainage and restoring hydrology of the degraded site. This is achieved by detailed mapping of the drainage network, identifying the outlet points; building canal blocks at major outlet point and appropriate points (100-1,000m apart depending on the slope) along the drains and quickly establishing ground cover to improve the soil moisture.

2. FIRE PREVENTION AND CONTROL

Fire prevention needs to be done both in the forest reserve and the adjacent lands. Water table should be raised in line with the first strategy in all fire prone areas. The fire risk should be reduced through coordination with adjacent land owners. Regular patrolling and monitoring should be undertaken of all rehabilitation sites to detect any disturbance and identify any fires in adjacent areas. Any fires should be quickly put out through a coordinated effort from different agencies.

3. ENCOURAGE NATURAL REGENERATION

This is suitable in areas where the degraded area is relatively small and surrounded by forests which provide options for easy seed dispersal. In addition the water level should be relatively high and the area safe from fires. In these circumstances the areas can be left to regenerate naturally with periodic monitoring.

4. ASSISTED RE-VEGETATION

Smaller degraded areas can assisted to rehabilitate naturally by providing suitable planted materials (avoid non peat swamp forest species), planting pioneer species in open areas and regular maintenance.

5. ENRICHMENT PLANTING

Areas dominated by single pioneer species eg. Mahang (*Macaranga pruinosa*) or Tenggek Burung (*Euodia ridleyi*) should be enriched with other species to increase flora diversity. Forest species such as Mersawa Paya (*Anisoptera marginata*) Ramin (*Gonystylus bancanus*) and others high quality peat species can be planted and maintained to increase survival rate.

DISCUSSION:

- We found that in restoring peatland areas, hydrological management needs to be restored before trees are replanted.
- Tree species selection is important. If the area is very degraded and far from natural regeneration sources, pioneer species are better to help recolonise the peatlands.
- Volunteers must be at manageable numbers
- Plants must be monitored to improve survival rate.
- Weeds need to be controlled to reduce the risk of fire.
- Education and awareness is important to avoid human destruction of existing peatland areas.
- Alternative income sources are just as important to curb deforestation of peatland areas. It is better if communities can generate income from peatland areas without degrading the forests.

RESULTS & RECOMMENDATIONS:

Rehabilitation is a multi-stakeholder effort. Various departments and organisations need to come together in order to manage peat areas, prevent and control fires, carry out patrolling, fund the rehabilitation efforts, build canal blocks and plant trees in degraded areas. It is important to take it step by step; to re-assess the situation often and make necessary adjustments. Awareness and education is the key to peatland conservation, as not many members of the public are aware of the issues surrounding peatlands, even people who have been living on peatlands for a long time.

Rehabilitation and Conservation work needs to be continued, and peat fire control abilities strengthened. The public and local communities should be educated regarding conservation and sustainable management of peatland ecosystem.

Forest Rehabilitation

Assisted Natural Forest Regeneration

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